

REMARKS

This communication is in response to the Office Action mailed on May 3, 2004. In the Office Action claims 84-87 and 89-111 were pending on which claims 93-99 and 104-105 were allowed; claims 84-87, 89-92, 100-103, and 106-111 were rejected. The previous amendment filed on November 25, 2003, especially with respect to arguments relating to cited references is incorporated by reference in its entirety. Also, if the present amendment does not place the pending claims in condition for allowance, applicants respectfully request a telephone interview, this amendment providing the basis of such an interview.

The Office Action reports that the previous amendment filed on November 28, 2003 had been entered and was sufficient to overcome 35 U.S.C. §102(b) rejections in sections 5-7 of the Office Action mailed on July 28, 2003. It is noted that the previous amendment was filed by mail on November 25, 2003 and received by the Patent Office on November 28, 2003.

The Office Action next reports that the Specification was objected to because the limitations "approximately linear gaps" and "approximately identical metal plates" were shown in the drawings but not included in the Specification. The paragraph at page 30, lines 3-12 in the Replacement Specification filed on November 14, 2002 has been amended to add the above limitations. It is submitted that no new matter has been added.

The Office Action next reports that claims 100-103 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement because claim 100 recited "each substrate is capable of movement relative to the other substrates" but support for this limitation is not found in the Specification.

It is respectfully submitted that the limitation "each substrate is capable of movement relative to other substrate" is

shown in the drawings, especially FIGS. 12A and 12B. Both of FIGS. 12A and 12B illustrate an assembly having three stacked but de-coupled substrates 15, 15, 15. Further, the Replacement Specification at page 44, lines 12-13 provide that layers are "spot bonded" [emphasis added]. It is submitted that spot bonding (rather than continuously bonding) substrates 15, 15, 15 to one another ensures that the substrates are capable of some movement relative to one another. In contrast, continuous bonding is described in the Replacement Specification at least at page 58, lines 3-5 and illustrated in FIGS. 30A and 30B, which would not result in substrates or layers that are capable of movement relative to one another.

In response to the Office Action's rejection of claims 100-103 based on 35 U.S.C. §112, the Replacement Specification at the paragraph beginning at page 44, line 10 and ending at page 45, line 17 has been corrected to explicitly state that each substrate is capable of movement relative to the other substrates. This correction brings the Specification in conformance with claims, drawings, and other relevant description, especially the distinction between spot bonding versus continuous bonding and their respective consequences on the substrates. It is believed that this correction adds no new matter.

The Office Action next reports that claims 106-111 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,196,2452 to Harpell (hereinafter Harpell). Harpell illustrates a ballistic resistant body armor having reinforcing plates. Claim 106 recites in part, "each plate being continuous and non-overlapping, and wherein each gap is approximately uniform in width in the range of about 5 mils to 20 mils." [emphasis added] Therefore, the plates of claim 106 are continuous, i.e. having no openings or apertures. In contrast,

Harpell clearly illustrates plates 16 that are not continuous, but rather, have holes 24 for sewing. Also, Harpell states the following at Col. 13, lines 18-24:

Planar bodies 16 can be affixed using any conventional means, as for example, bolts, screws, thread and the like. In the preferred embodiments of the invention, planar bodies 16 are sewn to at least one surface of each substrate layer 14, and the number and types of planar bodies 16 are such that article 10 has the required flexibility.

The Office Action in section 15 states that Harpell at Col. 16, line 1 discloses using adhesive to affix planar bodies instead of stitching. Applicants respectfully contend that Harpell merely lists securing means such as "stitching, adhesive, bolts, staples and the like." Harpell does not state adhesives and stitching alternatively. Thus, applicants believe it is possible that Harpell can intend a combination of adhesives, such as for positioning, and sewing. In such a case, the Harpell plates would not be continuous as recited in claim 106. Also, it is respectfully submitted that Harpell illustrates multiple embodiments of plates at FIGS. 5-13, which uniformly illustrate without exception apertures in each and every plate. Therefore, it is respectfully submitted that Harpell does not teach, show, or suggest using continuous plates as recited in claim 106.

Further, claim 106 recites a gap width of 5 to 20 mils between plates. The Office Action states that discovering an optimum value involves only routine skill in the art. However, it is respectfully submitted that a gap width of 5 to 20 mils would not be an optimal value for plates sewn on a ballistic-resistant vest. First, it is submitted that sewn plates would not have gap tolerances measured in mils or thousandths of an inch. Also, it is submitted that such a gap width would result in a fabric or fabric assembly that is relatively inflexible given the thickness of plates required in a ballistic resistant vest. Therefore, it is

respectfully submitted that one skilled in the art would not be motivated to modify Harpell with the features of claim 106; and therefore, that claim 106 is not obvious in view of Harpell. In light of the foregoing, it is respectfully submitted that claim 106 is patentable over Harpell. Claims 107-111 depend on claim 106 and are believed to be separately patentable. Reconsideration and allowance of claims 106-111 are respectfully requested.

The Office Action next reports that claims 84-87, 90-91, 100-103, and 106 were rejected under 35 U.S.C. §103(a) as being unpatentable over by WO 93/21492 to Patchett (hereinafter Patchett) in view of U.S. Patent No. 5,953,751 to Kobren (hereinafter Kobren) in further view of U.S. Patent No. 5,601,895 to Cunningham (hereinafter Cunningham). Patchett discloses a body armor having a plurality of interlocking plates affixed to a substrate. Kobren discloses a medical glove having a plurality of curved plates having protrusions extending from their bottom surfaces to affix to the medical glove webbing. Cunningham discloses a flexible puncture proof material having a plurality of plates embedded in an elastomeric substrate.

Applicants respectfully assert that the combination of Patchett and Kobren is not obvious in that one skilled in the art would not have motivation to modify plates used in body armor with the thickness of plates used in a medical glove. To do so would fundamentally alter the body armor by in that the body armor with ultra thin plates (2 to 5 mils thick) would not provide adequate protect against bullets. Patchett no where suggests that it would be obvious to use plates as thin as used in Kobren. Further, Patchett expressly indicates that the plates should accommodate tilting of one plate relative to another so the sheet material may be "flexed". [page 9, lines 27-32] Thus, it is contended that if the Patchett gaps were modified to be 2 to 5 mils that its plates could not tilt relative to one another. For this reason, it is believed that Patchett suggests gaps wide enough to permit tilting

or flexing, and therefore, teaches away from very narrow gaps that would necessarily impede tilting.

Also, applicants respectfully assert that the Office Action is combining features found in various references in order to read on the features of claim 84. The Office Action does not include why those skilled in the art would be motivated to combine features of vastly different articles (body armor and a medical glove). To do so, would seemingly render both the body armor and the medical glove unsuitable for their intended purposes. In other words, applicants do not believe it is reasonable to combine references so that the reference articles lose their utility. Thus, applicants respectfully request withdrawal of rejections based on the combination of Patchett and Kobren absent a motivation or suggestion to combine such references.

Further, assuming arguendo that the three cited references can be reasonably combined, they still do not teach, show, or suggest all the features of claim 84. Claim 84 recites in part, plates that are "arrayed in a pattern such that a plurality of approximately linear gaps are defined between adjacent affixed plates, wherein the gaps are approximately uniform in width, and wherein the gap width is approximately 2 to 5 mils." [emphasis added] None of the cited references teaches, shows or suggests 2-5 mil (i.e. ultra thin), linear, uniform width gaps as in claim 84. It is true that the gaps between the Kobren plates can be quite small. However, the Kobren plates are not polygonal, and therefore, the gaps between Kobren plates cannot be linear as recited in claim 84.

To further distinguish claim 84 from the cited art, claim 84 has been amended so that the plates are "planar" and the plurality of metal plates each have "a bottom surface" affixed to the top surface of the flexible substrate. Thus, the plates used in Kobren are not "planar" in that the Kobren plates are curved to fit the fingers of the user. Also, the Kobren plates are not

planar in that each plate includes a projection or stem to affix to the glove's webbing. With respect to Cunningham, the Cunningham plates do not have bottom surfaces affixed to the top surface of a substrate because they are embedded.

In light of the foregoing, it is respectfully submitted that claim 84 is patentable over the cited art. Claims 85-87 and 89-92 depend on claim 84 and are believed to be separately patentable. Reconsideration and allowance of claims 84-87 and 89-92 are respectfully requested.

The Office Action also rejects claims 100-103 in view of the combination of Patchett, Kobren, and Cunningham. The remarks with respect to claim 84 are incorporated herein. Claim 100 defines a triple layer structure and recites, in part, plates that are "arrayed in a pattern such that a plurality of approximately linear gaps are defined between adjacent affixed plates, wherein each substrate is capable of movement relative to the other substrates, wherein each gap is approximately uniform in width in the range of about 5 mils to 20 mils, and wherein each plate has an approximately uniform thickness in the range of 5 to 20 mils." The Office Action states that Patchett discloses a multi-layer structure. However, Patchett includes few of other features of claim 100, including approximately linear gaps, uniform gap width in the range of 5 to 20 mils, plate thickness in the range of 5 to 20 mils, and capacity for relative movement of the substrates as recited in claim 100. Claim 106 was also rejected based on the combination of the above three references. Claim 106 has been addressed above and the relevant comments are incorporated herein.

In light of the foregoing, claims 100-103 and 106 are believed to be patentable over the cited art. Reconsideration and allowance of claims 100-103 and 106 are solicited.

Claims 113-115 are new and depend on allowed claim 104. It is believed that claims 113-115 present no new matter and are

separately patentable. Claims 113-15 are presented for consideration and allowance.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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